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ABSTRACT

Acknowledging that in this age of technology students need to learn how to integrate the values of both the humanities and science/technology, this paper describes a special nonclassroom, noncredit program to that end for college freshman honors students at the University of Evansville (Indiana). Following an introduction, the paper discusses the characteristics of the groups sponsoring the seminar, the university's academy of arts and sciences, and the college of arts and sciences. It then outlines the criteria for student participation, which stress both academic achievement and the ability to write a lucid essay articulating the student's understanding of a liberal arts education. Next, the paper describes the activities that take place in the meetings, ranging from the religious and philosophical through the vicarious experience of other civilizations and cultures to the practical ethical/technological issues. The paper concludes with a discussion of the program's benefits, including its informality and its multidisciplinary and multigenerational nature, and the priority it gives to writing and research--by both students and faculty members. (HTH)

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A Freshman Honors Seminar:

Dialogue between the Humanities and Science/Technology

Panel on CROSSCURRENTS: THE HUMANITIES AND SCIENCE/TECHNOLOGY

The 13th Annual Wyoming Conference on Freshman and Sophomore English

(Literacy in an Age of Technology)

June 27, 1984

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In an age of technology, students need to learn how to integrate the values of both the humanities and science/technology. A special non-classroom, non-credit program for freshmen honors students at the University of Evansville provides a setting in which that goal can be accomplished. Begun in 1981 by Ms. Sue Woodson, President of the University of Evansville's Academy of Arts and Sciences, and Dr. Samuel Longmire, then Acting Dean of the College of Arts and Sciences, the Freshman Honors Seminar is sponsored by the University of Evansville's Academy of Arts and Sciences and the College of Arts and Sciences (headed now by Dr. Martin Jones, Dean). I should like to discuss the operation of this seminar: specifically (1) the sponsoring groups, (2) criteria for participation, (3) activities at the meetings, and (4) benefits of this program.

Sponsoring Groups

One of the sponsors, the Academy of Arts and Sciences, founded in May, 1980, is composed of a small group of people whose lives

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> demonstrate those qualities of exemplary citizenship, community commitment, and intellectual and moral integrity which are a part of the . . . traditions of liberal education. Each Academy member holds a Bachelor of Arts or Bachelor of Science degree in one of the liberal disciplines from an accredited institution of higher learning. . . . Collectively, the Academy is dedicated to supporting the values and ideals provided by a liberal arts education. Individually, the members stand as an eloquent answer to the question: "What can one do with a liberal arts degree?" (flyer).

Among the present members are an attorney, a Superior Court judge, a physician, a general manager of Inland Container Corporation, an executive vice president of Crescent Plastics, a professor emeritus of sociology, an executive director of Planned Parenthood, and the president of the Philharmonic Board of Directors.

Those community leaders are elected to the Academy by the faculty of the College of Arts and Sciences. The College, according to the Preamble to its bylaws,

> holds that men and women who are to live satisfactory personal lives and to assume responsible leadership in society need the liberating influence of the best that has been thought, said, and done in human history. For students to acquire professional tools is not enough; they must acquire a love of learning that will continually prepare them to make valuable judgments on the experiences of life. To that end the College

> strives to create an intellectual atmosphere in which teacher and student pursue wisdom together (flyer).

That cooperative pursuit of wisdom can occur in the unique seminar setting created by the Academy and the College.

Criteria for Participation

Criteria for student participation in the seminar are a high scholastic record, recommendation by a faculty member, and sensitivity to the values of a liberal education, as revealed in an essay written by the student as part of his/her application for membership. Thus, the Freshman Honors Seminar places a high priority on not only academic achievement but also the ability to write a lucid essay articulating the student's understanding of liberal education. An examination of essays written by freshmen participating in the 1983 and 1984 seminars[1] reveals a frequent contrast between professional and liberal arts education. These freshmen (some of whom have declared majors in physical therapy, medicine, secondary education, optometry, accounting, and social work) value professional education for its providing "specific knowledge" in a particular field and its teaching them to adapt to groups. They realize the need for "technical, marketable skills." However, most of them also perceive disadvantages in professional education, for example, limitation to "one branch of knowledge" or "one channel of thought" and, consequently, the possibility of being "locked into one career" or having "die-cut minds" to fit into "cogs of machinery." Furthermore, they sense the danger of their having an ethnocentric world view.

To avoid these limitations, people should--the students think--take liberal arts courses. (Only one student mentioned a disad-

vantage of such an education: earlier she thought it would involve a "smattering of different courses" [a "shallow overview"], but she later changed her mind.) The values discussed most often in the essays were (in the students' words) "comprehensiveness," "synethsis," "choices" (expressed as "exposures to many fields" and examination of 'all options'"), "a trained perception" in various disciplines, "stimulation of the mind," "moral development," "individuality," "imagination" and "creativity," exploration of the "dark unexplored side" of themselves (One wrote of teachers of liberal arts as "keepers of the faith in magic"), "self knowledge," and "appreciation for human beings." Development of the students' ability to become (themselves) transmitters of these liberal arts values was emphasized by one young woman, thinking of a potential role as a mother. For her, liberal arts education began, she explained, in her parents' home, and she hopes sometime to emulate their achievement.

Of all the qualities discussed by the students, one (cited several times) is especially pertinent to the topic of our session: flexibility--both specific (a provision for a possible career change [mentioned remarkably often for freshmen, I think] and an avocation) and general (the ability "to grow with the times" or "deal with changing conditions"; "becoming competent in the processes which provide flexibility"). A reader of these essays might wonder if that flexibility allows for integration of liberal arts and professional education. Two students, in fact, stressed that integration. One quoted Alfred North Whitehead: "The antithesis between a technical and a liberal education is fallacious. There

can be no adequate technical education which is not liberal, and no liberal education which is not technical"/ (Harvey). Another used a flame and candleholder image to describe such a relationship:

> Have you ever tried to stand a tall candle on any surface without a candle holder? It is nearly impossible. Like a candle holder, a liberal arts education is a foundation, a base for the study of a certain profession. The candle, representing a specific study, can give off a flame if it is lit and standing on a foundation. . . . This knowledge will become my candle holder, my foundation, for my occupation (Ulrich).

As we shall see later when I describe the faculty presentations at the seminar meetings, some faculty members provide models for that fusion of two worlds.

Activities at the Meetings

Participants (limited to 10-12 students per Spring Quarter) meet on Sunday evenings in homes of Academy members. After dinner (provided by an Academy member), a faculty member makes an informal presentation based on his/her prime vocational or avocational interests; and then students, the faculty member, and Academy members share in discussion.

During the last three years the presentations[2] have dealt with many of the liberal arts values mentioned by the freshmen in their essays. For example, a range of religious and philosophical issues was explored. Rationalistic agnosticism (in an essay by the 19th-century English mathematician and philosopher William K. Clifford) in philosophy professor Dr. Richard Connolly's presentation was

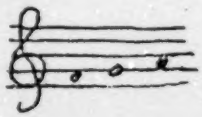
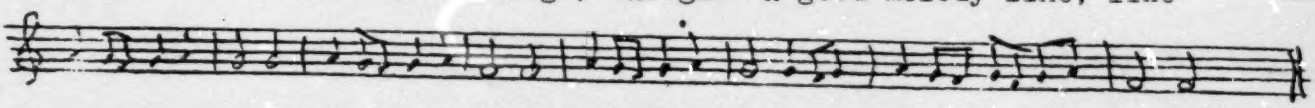
posed (although not formally) against the inevitability of religious belief in a presentation by religion professor Dr. Wayne Perkins. From the viewpoint of another discipline (chemistry), Dr. Jean Beckman spoke of scientific truth as always subject to further modification in light of additional observations. A political science professor, Dr. David Gugin, who often uses novels in his courses, affirmed the value of the artist's truth. While a study of the mechanics of politics (e.g., electoral behavior) is done best by political scientists and historians, the relationship of politics to the enigmas of human existence, he said, is portrayed better by a novelist.

A second dimension, the vicarious experience of other civilizations and cultures--an experience the freshmen wished for, was met by several seminar presentations: on Polish history (Dr. Thomas Fiddick) and Greek mythology (Dr. Donald Richardson). The development of imagination, another value appearing in the freshmen's essays, was encouraged by literature presentations. For example, one seminar meeting focused on the process of reading a poem (in the professor Dr. Michael Carson's words, "to experience, to enact a poem in themselves using their imaginations, patiently, searchingly, open to suggestions the poet gives").

Practical ethical/technological issues were also analyzed. In a team presentation, Dr. Karen Ott (a biologist) and Dr. Phil Ott (a religion professor) discussed reproductive engineering: artificial insemination by husband, artificial insemination by donor, in-vitro fertilization, and embryo transplant. Both promise and threat surfaced in discussions of these questions: What can I learn from tradition? What is the present situation? How can I act

with responsibility? What are the consequences of my choice?

Some of the seminar meetings dealt with more personal topics (although obviously these cannot be completely separated from the ones previously mentioned): one on nonverbal communication (Dr. Hope Bock) and another on control of one's emotional states (Dr. John Felton). And several presentations consisted of personal approaches to a particular discipline. Reporting later on his "A Personal Approach to Musical Composition," Dr. Clark Kimberling (a mathematics professor who also composes music) says:

> . . . I emphasized two things: (1) the highly mathematical nature of music; (2) the highly nonmathematical nature of music. In the first vein, I sat at the piano and pondered the question, how good a composition can one make using only and ? The question immediately leads to mathematics: permutations, inversions, etc. Then we (I and the freshmen) composed melodies using only 
>
> The mathematical underpinnings became richer and more varied. I tried to persuade the audience that mathematics wasn't enough, though. A good melody line, like 
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> depends heavily on nonmathematical mysteries for its goodness. These mysteries are, I told them, more <u>cultural</u> than is generally acknowledged. This led to a discussion

of left and right cerebral hemispheric roles ("analytic" and "romantic"). When we graduated from 3-note melodies to 5-note melodies, the freshmen were impressed that some of the world's greatest tunes are pentatonic.

We discussed the mathematician Birkhoff's theory of aesthetic measure as applied to melodies (Beethoven's "Ode to Joy" measures 3.3--the highest Birkhoff published). I explained why Birkhoff's formula for measuring melodies was inadequate--it was exclusively mathematical--every great melody depends intrinsically on "culture" and "mysteries" which are the main forces that work on and in composers.

We discussed Alfred North Whitehead's quote that "modern mathematics (in the 1920's) is the most creative effort of the human spirit--a second claimant to this position is music" [approximate quote].

In my own presentation, "Personal Writing for Self-Discovery," I shared my Mennonite background that led me to write personal experience essays: "Forbidden Fancies: A Child's Vision of Mennonite Plainness" (The Journal of Ethnic Studies, Fall 1983); and "Beyond Cap and No Cap: Reentry into Life and Scholarship," in The Road Retaken: Women Reenter the Academy, edited by Irene Thompson and Audrey Roberts (a forthcoming MLA book). I explained to the freshmen how I began writing about the Mennonite cap and other plain clothing to discover who I was and who (in the process of dropping some elements of my background) I had become. I used not only rough drafts and final versions of essays I have written but also

two poems (one published and another unpublished) written by people responding to my having told them about my life, particularly the clothing. Thus, my past experience produced creativity not only in me but also in others. As I talked with the freshmen, I emphasized the balance needed between the crisis impetus for writing and the objective revisions, made sometimes of my own volition and sometimes at editors' suggestions. I tried to dramatize the interplay between the personal and the academic.

In many ways, then, faculty members' presentations revealed their concern with the values discussed in the freshmen's essays. And some faculty members, in their presentations and/or in their activities elsewhere (outside the seminar meetings), provide models for a key quality mentioned in those essays: flexibility. English teachers who, after being trained in literature, have now developed an interest in and are becoming either self-educated or formally trained in technical writing constitute one such example. One seminar meeting was conducted by Dr. Ann Stuart, an English professor whose specialization originally was the Renaissance and who now teaches both Renaissance Literature and Technical Writing. She developed the technical writing program at the University of Evansville and is the author of Writing and Analyzing Effective Computer System Documentation (Holt, 1984). In her seminar presentation she reported on her having made a new career for herself; she has applied the skills from her liberal arts background to a new discipline.

Of all the faculty members participating in this Freshman Honors Seminar, the exemplar of versatility has been Dr. Clark

Kimberling, the mathematics professor mentioned earlier. In his seminar presentation he demonstrated expertise in mathematics and music. He also moves deftly between (1) writing scholarly mathematics articles (for journals such as Fibonacci Quarterly and American Mathematics Monthly) and a biographical study of Emmy Noether, a woman mathematician (a chapter in Emmy Noether: A Tribute to Her Life and Work, ed. James W. Brewer and Martha K. Smith, a book to which leading twentieth-century mathematicians in Germany, the Soviet Union, and the U.S. have contributed) and (2) initiating and writing most of the articles for the "Microcomputer-assisted Discoveries" section[3] in The Mathematics Teacher (designed for junior college and high school mathematics teachers). The following tribute to him was written by Harry B. Tunis, Managing Editor of The Mathematics Teacher:

> In recent years there has been a trend in professional journals to include articles on the effective uses of technology in the classroom, in particular, using microcomputers for instruction. This theme has been explored extensively in the section, "Microcomputer-assisted Discoveries," in the Mathematics Teacher, a refereed publication of the National Council of Teachers of Mathematics. The most prolific contributor of this section has been Clark Kimberling. His writing has offered novel tips on how to use computing power to teach mathematics better. His writings have been very well received by the readers of the journal (letter).

Dr. Kimberling's activities in mathematics, music, and com-

puters are, as he conceives them, "different forms of expression from a single urge" (interview). One of his favorite quotations is something he read in Time magazine: "Words are the means by which we express ourselves into existence." Despite their diversity, his activities involve manipulations of symbols--words and musical phrases--to express himself into existence. While his mastery of different forms will not be achieved by the students participating in the seminar, he offers them a model for emulation. As they hear (not only in the Freshman Honors Seminar but also in his classes and in composition classes, in which he has lectured) about his work in several disciplines, they share Steppenwolf's discovery that one need not merely "oscillate . . . between two poles [disciplines]" (Hesse 66) but also engage creatively in multifarious versions of "a single urge."

Benefits of This Program

The chief benefits of this Freshman Honors Seminar are its informality, its multi-disciplinary and multi-generational nature, and the priority it gives to writing and research--by both students and faculty members.

The manner in which these glimpses of faculty members' research and writing are given to the freshmen honors students is determined by the informal setting of the seminar meetings. In their presentations, faculty members, retaining the academic quality of their classroom and research activities, use, however, a more personal approach than is possible in the classroom. For example, Dr. Wayne Perkins, in his presentation, "The Inevitability of Religious Belief," paired off the students and had them engage

in autobiographical storytelling. In "Personal Approaches to Musical Composition," Dr. Kimberling sat at the piano and, with the freshmen, composed melodies. For a few minutes at the beginning of my presentation, "Personal Writing for Self-Discovery," I put on a Mennonite cap to dramatize the concreteness of what I experienced and what I wrote about. I asked the students what the cap suggested to them and asked them to imagine the response if someone had worn such a cap in their grade or high school or even were now wearing one here at the University of Evansville.

During and after these presentations by faculty members, the dialogue among the three groups (students, teacher, and community leaders) was distinctive for its multi-disciplinary quality. Of course, some of the presentations themselves involved more than one discipline; however, even the ones that focused on a single discipline stimulated participants to create, from their own backgrounds and academic interests, a multi-disciplinary occasion. A related advantage is that the students gain from the combined perspective of teachers and community leaders. Scholarly discussion in an informal atmosphere, among people representing several generations, provides a dimension not often present in regular classroom work.

Despite its informal setting and discussion, this Freshman Honors Seminar affirms the primacy of writing and research. While the seminar is not limited to the English Department or to English majors, the English Department's concerns for itself and, indeed, for writing across the curriculum are integral to the program. In this seminar, writing is an important component: students need to write to become eligible, and they hear the results of faculty

members' research and writing. All the students chosen for the program--those already majoring in or planning to major in English, in other humanities, and in fields requiring professional education--gain a brief exposure to the relationship between research and writing. Through their participation in and observation of both composition and group discussion, these students (brought together by a collaborative effort of the University of Evansville's Academy of Arts and Sciences and College of Arts and Sciences) are introduced to the interface between liberal arts and professional education and between the humanities and science/technology.

NOTES

[1] Copies of essays were provided by Dr. Martin Jones, Dean, College of Arts and Sciences, Univ. of Evansville.

[2] In March and April 1984 I examined summaries obtained from the faculty members who gave the presentations.

[3] As of January 1, 1985, this section will be entitled "Microcomputer-assisted Mathematics."

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